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ABSTRACT

There have been well over 200 Presidentially declared disasters in the United States in the past 5 years. No state has been spared. The costs associated with these events are staggering. Communities can take responsibility for alleviating the impact of natural disasters to ensure citizen safety, prevent damage to facilities, prevent delays of businesses, and to protect families and homes. This guidebook outlines four steps to take to help build a disaster resistant community: forming partnerships, assessing risk, prioritizing needs, and communicating with various organizations in the community. The guidebook provides a framework from which to work, ideas on how to approach building a disaster resistant community, and examples of what has worked in other communities. Mitigation measures for community growth and for improving code enforcement are highlighted. Five case studies are presented that illustrate success of business partnerships, mitigation measures, importance of risk assessment, protecting schools and the children and teachers in them, and the success of proper mitigation. (Includes 12 checklists with worksheets to be used as a guide for enlisting community partners, identifying risks and resources, mitigation measures, and event planning and media contacts. Contains the address and phone number for each of the 10 regional FEMA offices.) (AVC)

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Building a Disaster Resistant Community

PROJECT IMPACT

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OVER 250 BUSINESSES IN

CHESTERFIELD, MO WERE AFFECTED

BY THE MIDWEST FLOODS OF 199[illegible]

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amage in the U.S. as a result
cost 10.6 billion dollars.

Over the past 5 years,
the average annual cost to
FEMA alone has been more
than 1 billion dollars,
excluding the cost of the
Northridge earthquake

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Building a Disaster Resistant Community

PROJECT IMPACT

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PARTNERSHIPS

The Key to Building a Disaster Resistant Community

This chapter describes how to identify and build constructive partnerships in your community. The concept is simple: We can accomplish more together as a group than as individuals. This chapter will help you identify who you should seek out to become partners in this effort and why. It also will offer ideas to help you convince these potential partners that they are not simply interested bystanders but true stakeholders in Project Impact. This process will help you recruit the right team to make your community disaster resistant.

CASE STUDY

DARLINGTON, WI

Partnership Takes Root

When the City of Darlington was flooded in 1993, community leaders decided enough was enough. After experiencing previous flooding in 1950, 1959, 1969, and 1990 the city—its businesses and citizens—decided they could no longer sit by and let nature decide the future of their community. Their losses were extensive and directly related to the infrastructure and commerce that were the foundation of the city. The damages included: ● The closing of all major highways into the city ● Damaged fuel and chemical storage tanks located along the river ● Damage at the city's wastewater treatment plant ● Damage to over 30 businesses in the historical downtown area.

After having bridges and roads washed out, extensive crop damage, dozens of homes and businesses damaged, sewer and power damage, and recreational facilities destroyed, the elected leaders of Darlington realized that they had to take action to protect their community. They also realized that they could not do it alone. The cycle of repeated flooding indicated that mitigation measures were needed and that a partnership would need to be developed to acquire the necessary resources. Working with FEMA, the Economic Development Agency, the State, businesses, and citizens, Darlington planned a course of action that would protect the homes, families, businesses, and critical infrastructure that were vital to its future prosperity.

The city undertook many successful mitigation actions. They included: ● Floodproofing 12 buildings and relocating another 15 in the downtown area (This ensured that the area would be resistant to future floods.) ● Developing an alternate site for business operation (A business park on a 35-acre parcel south of Darlington was developed so that those businesses located in the floodplain would have a place to relocate. This ensured that the businesses were safe while at the same time protecting the tax and economic base of the city.) ● Preventing future development near the river (Darlington acquired land near the river and converted it to recreational space to ensure that future flooding would not threaten homes or businesses in the area.).

By bringing together different parties and interests—in partnership—the leaders of Darlington struck upon the core concept of a disaster resistant community: We can accomplish more together than apart.

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WHY PARTNERSHIPS?

Natural disasters permeate every corner of our communities. No individual, business, or organization is left untouched. **If your community were to suffer the hardship of a natural disaster, everyone would need to pull together to recover.** This partnership is inherent in any community's struggle to address the consequences of earthquakes, floods, hurricanes, or wildfires. When carrying out an agenda of mitigation, this same partnership will be central to your long-term success.

LIKELY PARTNERS

A Public-Private Collaboration

In helping your community protect itself against natural disasters, you will be most effective if you draw upon the experiences, resources, and policies already in place within your community. The challenge is to bring together all of these elements under one roof to reduce redundancy, identify weaknesses and strengths, and ensure the most effective effort. Communities should form or identify a *Disaster Resistant Community Planning Committee* composed of local officials, business professionals, and other stakeholders with a shared interest in and obligation to protecting the safety and economic stability of your community for the future.

Keep in mind that business people are often community leaders—their responsibilities to their business and community are both complementary and interwoven. This is a mutually beneficial process that already exists to some extent: The loss-reduction efforts undertaken by local governments naturally support corporate risk reduction and vice versa.

Please see Darlington, Wisconsin case study which illustrates the success of building partnerships on page 6.

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This cooperative collaboration will help determine the best outcomes in disaster resistance initiatives. For example, perhaps someone already has developed a business interruption plan that others can emulate to minimize loss of jobs and activity resulting from disaster. Or, perhaps another one of the Project Impact partners could offer incentives to help others address their own risks.

Building consensus about the mitigation needs in your community is essential to success. A broad-based task force can build upon the views of everyone involved—from the citizens of your community to construction professionals to businesses and to policy makers—and identify the roles each can play in Project Impact.

WHO SHOULD TAKE THE LEAD?

Identifying a Community CEO

You will want to identify a person with entrepreneurial spirit and capabilities to oversee Project Impact to ensure its progress and ultimate success. This person could be a business executive, town manager, or leader of a civic group. It is most important to identify an individual who is clearly able to spearhead the effort and take responsibility for the initiative—to make decisions, defuse the issues, secure resources, and get things done. As an outgrowth of their responsibilities, a local government official should serve as support for the Community CEO and the *Disaster Resistant Community Planning Committee.*

Besides reducing the direct costs associated with natural disasters, mitigation reduces important indirect costs such as the disruption of daily routines, community services, commerce, and industry. Once you have everyone working together, you will find that the entire community can stand behind Project Impact because its goal is to protect the well-being and secure the future of *everyone* in your community.

WHO SHOULD BE INCLUDED?

Listed below are the primary sectors in a community that can be considered essential to mitigation and pre-disaster efforts. Each should be represented on the *Disaster Resistant Community Planning Committee*. They are:

- Industry & Business
- Infrastructure: Transportation, Utilities & Housing
- Volunteer & Community-Based Organizations
- Health Care
- Government
- Workforce
- Education

For a more detailed outline of potential partners, please refer to the Community Partners Checklist at the back of the guidebook.

WHY SHOULD THESE PEOPLE BE INCLUDED?

Once you have identified potential partners, it will be important to clearly define the reasons that will provide the rationale for their involvement. For example, the business and labor sectors have a significant interest in the durability of the communities in which they operate. The community supplies their work place, their workforce, and their market. It also supplies the infrastructure systems such as roads, electricity, and water on which commerce relies. But because each entity has a different agenda and different risks, you will need to explain specifically to every partner why they need to get involved with Project Impact and how they can help.

Consider ways in which the participation of Project Impact partners will help *them*. What incentives and benefits exist or can be created to help win their support? Additionally, consider what these people and their institutions are doing already to help the community. Building community goodwill, for example, can be a motivating factor for some partners.

Refer to the Resource ID Checklist at the back of the guidebook for more information about incentives.

MOTIVATING PROJECT IMPACT PARTNERS

Recruiting potential partners for the *Disaster Resistant Community Planning Committee* should not be difficult if participants clearly understand the importance of Project Impact and what they can gain from involvement.

The potential community participants are summarized below to help you recruit partners and determine specifically what each partner can contribute to the *Disaster Resistant Community Planning Committee*:

Industry & Business The business community can help the greater community reduce its vulnerability to disaster by considering how its mitigation needs apply to the community beyond its business. Internal, business-specific priorities—such as ensuring transportation systems and routes to facilities remain clear and functional following a disaster—also benefit the employees who work at the business, the surrounding neighborhoods, commerce, and the economy. Furthermore, many businesses have direct economic incentives for enacting and participating in mitigation efforts undertaken by a community.

See Des Moines, Iowa case study on page 14 for an example of how business mitigation efforts can affect an entire community.

A close look at the definitions of the words "community," "partnership," and "alliance" reveals that they are linked: it takes alliances to build partnerships and partnerships to make up a community. Much of this partnership exercise will consist of building on existing alliances and re-defining the nature of other partnerships.

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Infrastructure A community's infrastructure provides the lifelines without which citizens and businesses could not function. It is vital that representatives of lifeline organizations be involved.

Transportation systems include roads, bridges, railroads, transit systems, ports, and airports. They are critical to disaster response and recovery, as well as to facilitating ongoing commerce. Damage can leave communities isolated and at economic risk. Transportation experts can provide a wealth of knowledge and insight as participants on the committee.

Utilities serve communities with electricity, natural gas, heating fuels, fresh water, and wastewater disposal. Utility loss can create critical problems for emergency response, life support in hospitals, business operation and recovery. Utilities represent one of the most critical lifelines and must be involved. *For a specific example refer to the Des Moines, Iowa case study on page 14.*

Housing, both for single-family and multi-unit buildings, is often needlessly exposed to damage because of location in a hazard zone or because of structural weaknesses that make it vulnerable to damage. Building practices and outdated building codes often exacerbate conditions that create avoidable risks to life and damage that would render the buildings useless after a disaster. The debris created from damaged buildings and homes restricts mobility and imposes clean-up costs on local governments.

Volunteer & Community-Based Organizations The philanthropic missions of many of your community's civic and religious organizations should compel them to get involved. They invest time and money to improve your community. It would be counterproductive for these caring and dedicated organizations and people to make investments and take actions that might be destroyed by disasters.

Health Care Representatives of health care facilities must be involved because it is crucial that these facilities are built or retrofitted to withstand hazards so they can provide continuous service.

Hospitals provide not only the vital medical services a community needs on a daily basis but also serve as a critical element in post-disaster emergency services. Their importance to any community—pre-disaster or post-disaster—cannot be overstated.

Case Study: Anheuser-Busch

Keeping the Suds Safe: Seismic Retrofitting to Avoid Business Disruption

Anheuser-Busch operates a large brewery just a few miles from what became the epicenter of the Northridge Earthquake on January 17, 1994. • In light of the area's high earthquake hazard, Anheuser-Busch had initiated a risk reduction program at the brewery in the early 1980s. A risk assessment of critical buildings and equipment was performed, and those with unacceptable levels of risk were seismically upgraded over time without adversely affecting daily operations. • Because of the mitigation actions, the plant incurred only minor damage when the earthquake struck. Anheuser-Busch conservatively estimates that, had seismic strengthening not been performed, direct and business interruption losses at the brewery could have exceeded $300 million. According to Anheuser-Busch, this is more than 15 times the actual cost of the loss control program. Clearly, this loss control program paid for itself. • While this is but one example, it clearly indicates that mitigation measures can strengthen corporate balance sheets.

CREATING ALLIANCES

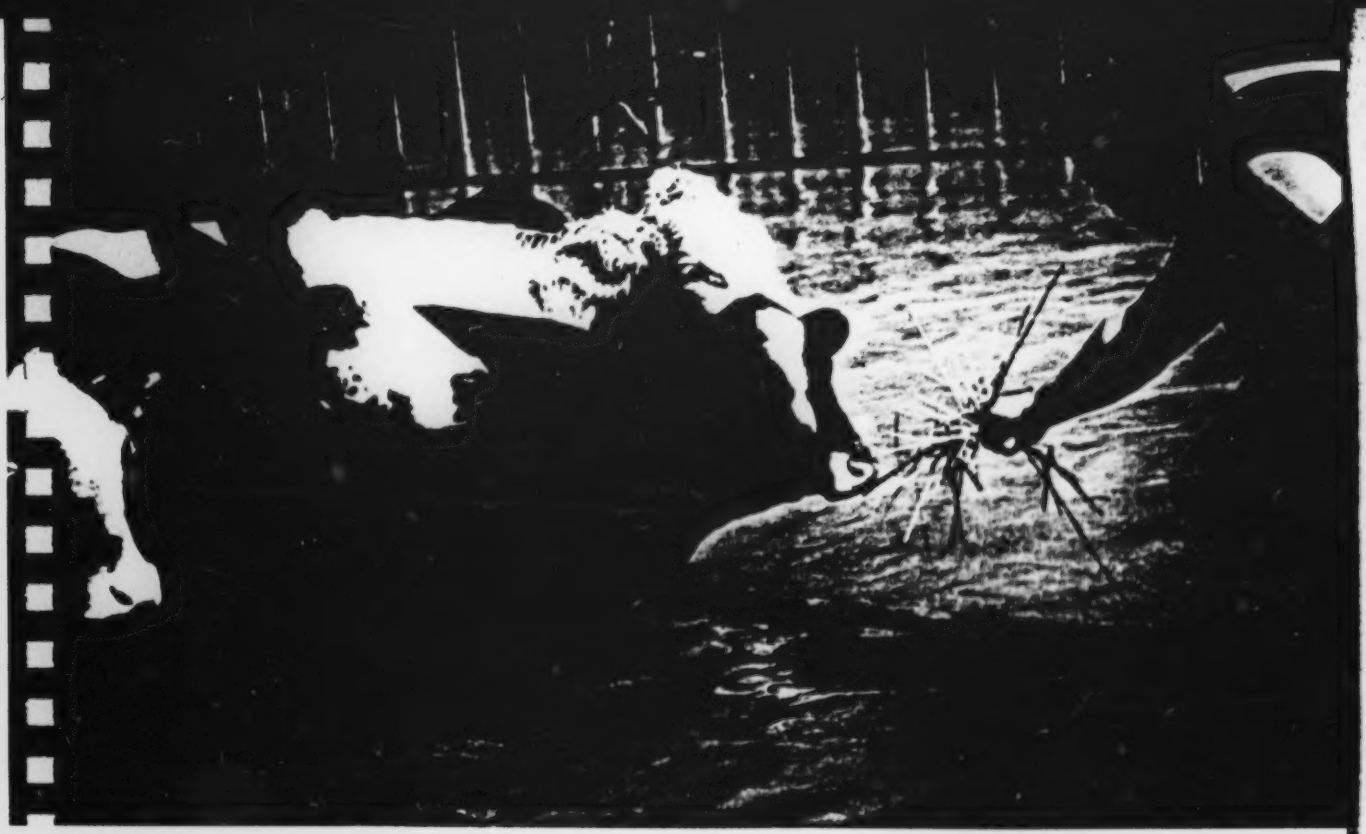
A key part of building a disaster resistant community is creating the alliances that will make it happen. While most organizations involved in Project Impact are already partners in disaster relief and recovery, the idea of committing resources to mitigate disaster effects may be a hard sell. A key part of developing and strengthening a coalition is to make sure that every participant benefits from the partnership. As each organization is contacted and agrees to serve on the *Disaster Resistant Community Planning Committee*, the collaborations must be negotiated and benefits defined.

Federal, State, County & Local Governments play an important role in managing hazard risks—providing early warning, pre-disaster mitigation, emergency assistance, and response and recovery resources. Government commitment to Project Impact is vital to the daily lives of its citizens and business community. More important, it is the role—as well as the duty and responsibility—of the government to protect the public health, safety, and economic stability and growth of its communities.

Workforce Those who work in your community—whether they are factory workers, accountants, or laborers—will see their lives, jobs, and families changed if a disaster strikes. By not taking steps to become disaster resistant, your community is in danger—every individual is at risk. The unions, professional societies, and other labor groups must bring resources and spirit to this endeavor. Employees have the power and responsibility to discuss and promote the idea of mitigation with their employers. The job they save may be their own.

Education Schools and day care centers represent the most important asset of a community—the living embodiment of its future. They must be able to withstand disasters without endangering the children they care for. In addition, many serve as primary shelter sites during and after disasters. If schools are closed for long periods of time post-disaster, other problems arise. Parents' day care needs increase. Classes may never get made up. The schools may lose funding from the state if they do not remain operational for a certain number of days, so the school year may be lengthened. Those responsible for educational facilities, therefore, must be involved.

Remember that the activities of the *Disaster Resistant Community Planning Committee* will be long-term and must be integrated into the policies and practices of the entire community to be successful.



As you assemble and organize the *Disaster Resistant Community Planning Committee*, consider the following perspectives and note that each member should:

- Have the authority to make decisions on behalf of his or her organization
- Understand and respect natural hazards
- Understand community vulnerability
- Acknowledge that citizens, agencies, businesses, and individuals are responsible for addressing risks
- Have some knowledge of how to address community risks
- Have the desire to address risks and mitigate them
- Have the ability to communicate Project Impact to colleagues, partners, and others

Sharing information among all Project Impact partners is crucial to reducing risk. Not only is each member responsible for their own interests, personnel, and facilities, they need to provide information about those interests, needs, and concerns to others—because what affects one partner will have a resonating effect on the others.

Since meetings are a vital component of building partnerships, there are additional pointers to help you conduct meetings in the Community Partners Checklist at the back of the guidebook.

BUILDING A DISASTER RESISTANT COMMUNITY SUMMARY

Upon completion of the First Phase of Project Impact you should have:

- Identified a Community CEO
- Identified and contacted likely partners
- Developed or reproduced Project Impact materials
- Held first planning committee meeting
- Established subgroups to tackle identified issues
- Begun the process of hazard identification and vulnerability

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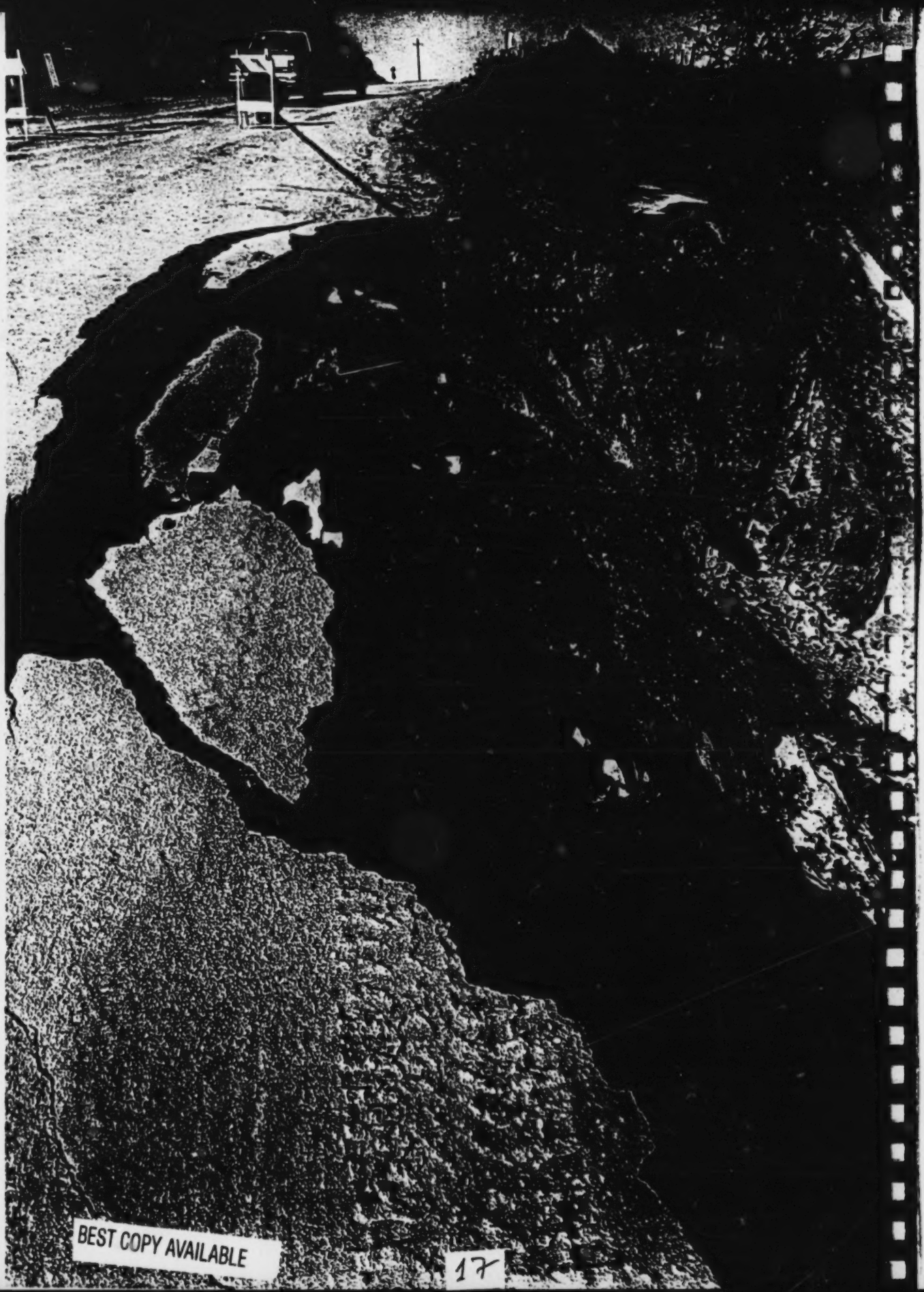

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ASSESSMENT

Hazard Identification and Hazard Vulnerability

The first task of the *Disaster Resistant Community Planning Committee* is to examine the community's risks for natural disasters and to identify its vulnerabilities to those risks. This will provide a solid background on which to build mitigation priorities.

CASE STUDY

DES MOINES, IA

Risk Assessment: The Guiding Light

If you could invest $14 million in your community to save $300-400 million, you would do it, wouldn't you? No, it is not a trick question. It is the financial basis for the reason communities need to identify the risks that they face.

During the 1993 Midwest Floods, the City of Des Moines, Iowa, suffered extensive damage to the Des Moines Water Works after floodwaters entered the facility. Because the treatment plant and associated equipment were under floodwater, the plant could not operate. More than 250,000 customers were without water service for 11 days.

More important, the business community was devastated. Although only a small percentage of the businesses in Des Moines reported closing due to direct flood damages, more than 40 percent of them were closed for some period of time due to the lack of water service. Even businesses that did not rely on water for production or operation were forced to close for health, sanitation, and fire safety reasons. A large percentage of area businesses remained closed until water service was restored. This resulted in a reduction of staff productivity and product inventory, as well as a loss of sales revenue. In addition, tax revenue was lost and the workforce suffered depressed wages.

In all, the damage incurred cost $14 million to repair while business losses in the Des Moines were estimated at between $300-400 million—a staggering comparison.

Since 1993, Des Moines wisely moved forward. The Des Moines Water Works has taken action to increase the reliability of the area's water service during a natural hazard event. The emergency protection measures that will provide a consistent water supply for their expanding customer base involve a two-step approach: the construction of a second, smaller treatment facility at another location and the use of aquifer storage. The second treatment facility will meet growing water demands and provide a limited back-up to the main plant if flooding should occur.

The experience of the City of Des Moines during the floods of 1993 illustrates how utility-related or lifeline disaster costs often stretch well beyond physical damage. Communities need to implement mitigation measures to protect the lifeline services that are critical to businesses and other functions of the community.

Communities face many decisions about the allocation of resources. These decisions are by no means easy. However, identifying the risks your community faces will help you make those decisions.

The idea behind risk assessment may be simple, but its results are powerful: Target your lifelines before Mother Nature does it for you.

A community that wants to reduce its existing exposure to natural disaster losses and ensure that its exposure to these hazards does not worsen should take these preliminary steps:

- Hazard Identification—Define the extent to which natural hazards threaten your community (e.g., mapping)
- Hazard Vulnerability—Identify, using current knowledge or some degree of existing building stock, those structures and areas that are vulnerable to hazards. In addition, a community growth plan or plat map superimposed on the hazards map will help you identify areas vulnerable to natural hazards

For related questions that will help you map both operational and economic considerations in your community, refer to the Identifying Risk Checklist at the back of the guidebook.

HAZARD IDENTIFICATION

What is it, and how is it done?

Everyone knows that natural disasters pose some threat to homes, businesses, and communities. We know that severe winds can damage the roofs on our houses and that heavy rains can flood our basements. We usually are aware of the natural disaster history in our communities. We know whether there have been floods, earthquakes, tornadoes, hurricanes, or wildfires. We also know that it is always a good idea to have some access to scientific expertise when identifying our natural hazards.

Hazard identification determines which areas of your community are affected by disasters, how likely it is that the disaster may occur, and how intense the disaster might be.

Floods, hurricanes, earthquakes, tornadoes, and wildfires are the most frequently occurring natural hazards. Some of these events can cause related or secondary hazard problems. For example, floods can cause mudslides, earthquakes can cause landslides, and wildfires (because they destroy plants) can make hillsides prone to landslide or mudslide.

Quantifying the natural hazard threat to your community helps you prioritize the neighborhoods and areas where you should be most concerned:

- Where are floods most likely to occur?
- How strong are the winds that can affect us?
- Where are the earthquake fault zones located?
- Does the composition of a community's soil make it prone to problems like landslides?
- Are our native plants the sort that exacerbate or retard fires?

Mapping the hazards that threaten your community allows you to begin a process of identifying the areas that are most at risk and therefore the areas where you may want to concentrate your community risk-mitigation programs. It also provides an objective basis for your decisions. The more refined your maps of natural hazards can be, the more refined your decisions about those hazards can be. If you know the probabilities of a hazard event in each area, you can apply a "cost-benefit" approach to your decisions.

Flood Hazard Prolonged rainfall, hurricanes, or tropical storms bring enough water to our rivers and streams that they overflow their banks and cause damage. In delineating a flood hazard, a judgment is made about the frequency of an event. For example, an estimation of annual flooding can help define the magnitude of the hazard against which you will make mitigation decisions. A topographical map can be used to delineate the geographic extent to which a disaster will have an impact.

As part of its statutory responsibilities to carry out a National Flood Insurance Program, FEMA has mapped most of the flood risk areas of the U.S. About 19,000 communities participate in the National Flood Insurance Program, and if your community has a 1% chance of a flood occurring in any given year, there is probably a flood map in your community's planning office. If your community does not have a copy of its flood map, you can request a copy by calling (800) 358-9616 or contacting the FEMA Regional Office for your community.

Severe Weather & Windstorms Strong gusts of winds up to 70 miles per hour are not uncommon anywhere in the U.S. But sustained winds of that magnitude, or winds of higher speed, are generally associated with hurricanes, nor'easters, and trop-

ical storms. The wind hazard maps developed for today's model building codes can provide a community-wide wind speed that your community might expect. Additionally, you may wish to take into account some of the special wind hazard circumstances of your community, drawing from the history of wind damage and related problems, the topography of the land, and other relevant input from the professionals and residents of your town.

The National Oceanic and Atmospheric Administration (NOAA), an agency of the U.S. Department of Commerce, can offer technical support in the identification of special wind hazards for your area. If you are unsure which office of NOAA to call, or where to initiate your contact, call the FEMA Regional Office for your community.

Earthquakes & Related Hazards An earthquake can hit almost every state in the U.S. In fact, about 40 states have a moderate to high hazard risk. It isn't necessary to be the site of an earthquake in order to feel its effects, particularly in the eastern U.S. The great earthquakes that struck the southeastern bootheel region of Missouri in the winter of 1811-1812 caused ground shaking that resulted in some structural damage as far away as Cincinnati. Ground failures from those events (e.g., sand blows or liquefaction) covered an area approximately the size of West Virginia.

Earthquake hazards have also been mapped for the model building codes of today. FEMA, working in partnership with the U.S. Geological Survey (USGS), has been able to develop state-of-the-art earthquake hazard maps that can be used as resources for those building codes. USGS has also worked on national liquefaction maps, and your state's geological survey will have soil maps to help identify at-risk areas.

Wildfires As our urban areas grow closer to wilderness areas, the risk of wildfire increases. Often referred to as "urban-wildfire interface," this hazard, once thought to threaten principally the dry southern areas of California, is now being seen in places as distant as Long Island, New York and the State of Texas.

A range of resources at the national and state levels (e.g., forestry services and natural resource departments) can help you identify areas at risk. Still, the best resource to start with is right in your own backyard—your local fire department. They will undoubtedly have the information to help get you started on identifying the hazards from wildfire in your community.

ASSESSING YOUR COMMUNITY'S VULNERABILITY TO HAZARDS

How is it done, and why?

Natural hazards invariably "seek out" the weakest part of buildings or systems. Strong winds will find the portion of the roof not properly nailed down. Ground motions will find the weak building connectors—structural damage, or worse, building failure, will result. The water treatment plant in the floodplain will stop functioning, and businesses throughout the community will be forced to close until water is restored. Finding the weak points in systems—identifying building types that are vulnerable to damage and anticipating the loss in high risk areas—helps you make decisions later about the expenditure of resources to reduce the potential for disaster.

Vulnerability identification determines which facilities are at risk and to what degree they might be affected, as well as how they might affect the vulnerability of other structures.

In assessing your community's vulnerability to a natural hazard, you need to know what level of hazard has been identified and what kind of building (function and construction type) you are considering. Geographic Information Systems (GISs) can help to overlay hazards mapping onto building locations and structure types. Moreover, a GIS can plot utility systems and grids so that weak points (e.g., in the electrical distribution system) can be spotted.

There are a variety of scientific and technical resources to consult for local buildings and systems. For example:

- FEMA's Hazards U.S. (HAZUS) is a GIS that includes an inventory, or varying levels of refinement, for all of the U.S. It also has an earthquake loss model and a flood hazard identification model within it. You can refine the inventory and bring wind loss modeling on line as FEMA develops it.
- Construction engineers in your community can obtain technical materials to assist in very broad or very detailed analysis of buildings throughout the jurisdiction.
- Utility system engineers and associations can help identify the vulnerabilities of power, water, transportation, or communications systems.

To start the process of assessing your community's vulnerability, call your FEMA Regional Office and inquire about HAZUS, partnerships with professional associations, and other sources of guidelines or expertise.

HAZARD IDENTIFICATION PROCESS SUMMARY

Purpose

To gather existing information about areas with a high likelihood of hazard occurrences and compile the information into a useful format.

Products

Maps depicting zones with a high hazard potential and digitized as part of a Geographic Information System (GIS).

Information about where to expect significant damage following natural hazard events for use in setting loss-reduction priorities, community growth management, emergency response, and recovery planning.

VULNERABILITY ASSESSMENT PROCESS SUMMARY

Purpose

To gather and organize existing information about the location and vulnerability of buildings, utilities, and transportation systems serving the community.

Product

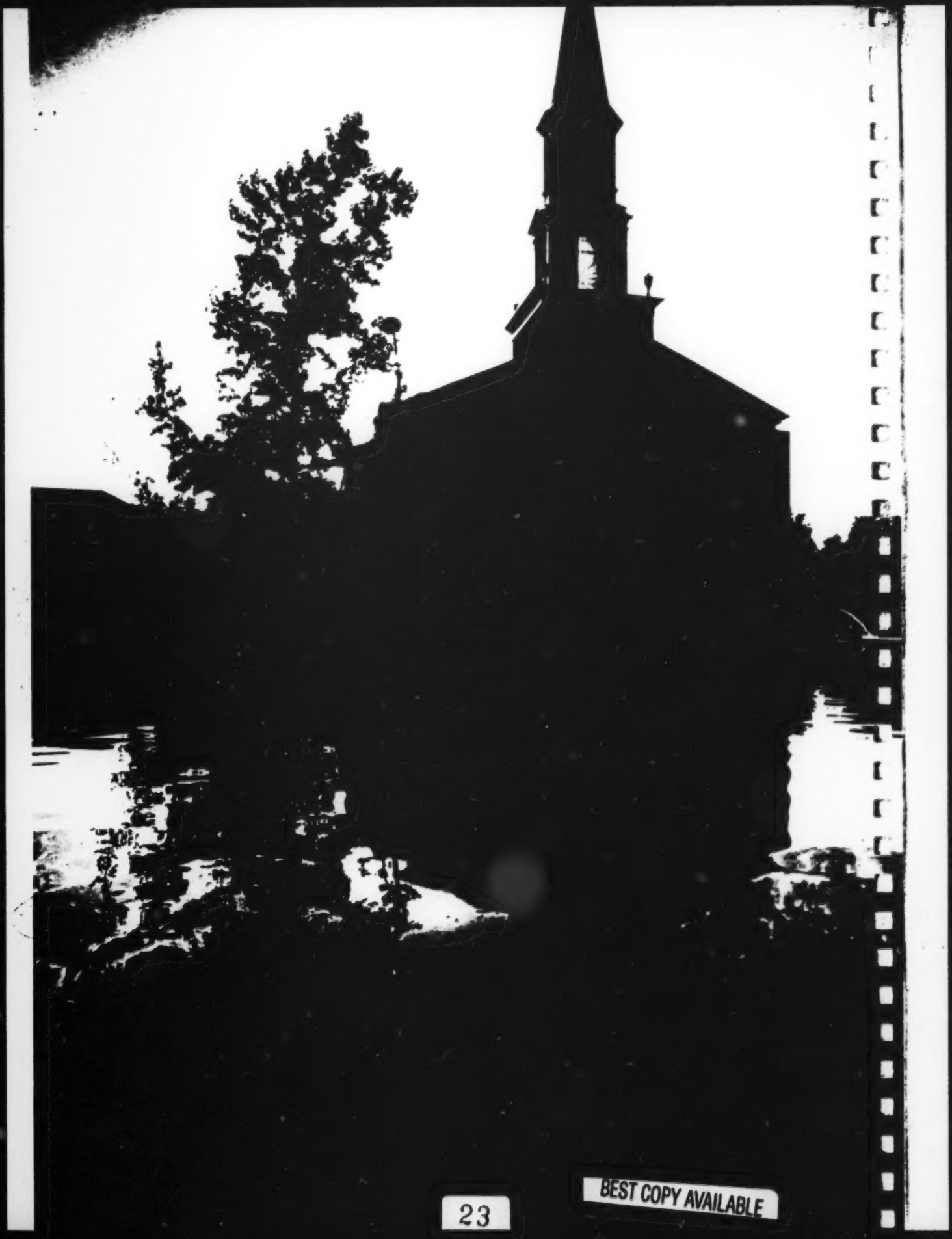
A consistent database that can be used to:

- Identify significant buildings by use, type, date of construction, location, ownership.
- Identify utilities and transportation systems.
- Estimate the potential for damage and loss of function due to different levels of natural hazards, using information about expected performance of buildings, utilities, and transportation systems.
- Set loss-reduction priorities and land use policies for emergency and recovery planning.

Risk assessment defines the potential consequences of a disaster based upon a combination of the community's hazard and vulnerability identification.

Upon completion of the Second Phase of Project Impact you should have:

- Gathered hazard identification and vulnerability information
- Compiled information into a GIS format or other useful format
- Begun the process of prioritization
- Developed hazard awareness materials for you community
- Developed graphic materials to support decision-making



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MITIGATION

Identifying and Prioritizing Risk Reduction Actions in Your Community

By now you know the sorts of hazards that may threaten your community and the neighborhoods and areas most likely to be hit the hardest. You also should have specific details about the buildings and systems that are most at risk. Now your community needs to target resources and prioritize its mitigation activities. This chapter will help you prioritize the actions you can take to reduce your existing disaster potential.

CASE STUDY

LOS ANGELES, CA

Keeping Children Safe: A Path to the Future

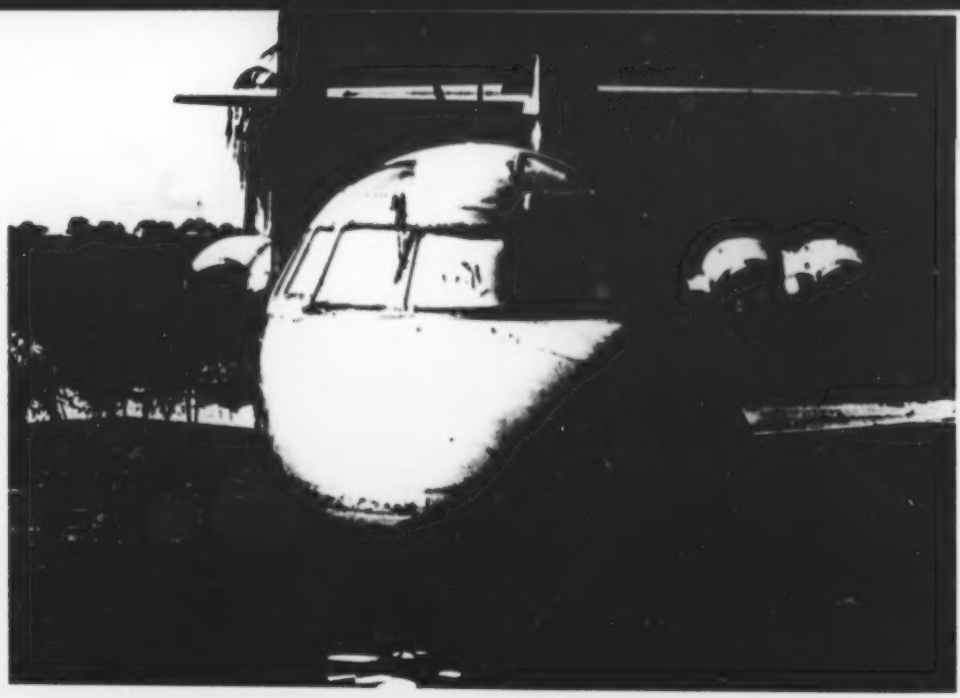
s your community searches to define its priorities, often the health and safety of your citizens will continue to be at the center of conversation. Ensuring that those most vulnerable —children and seniors—are safe during times of disaster will be at the forefront of most participants' thoughts. It was this priority that prompted the people of Los Angeles to undertake a major school mitigation program after the 1994 Northridge earthquake.

In the early dawn of January 17, 1994—Martin Luther King, Jr. Day—the Northridge Earthquake struck Los Angeles. Clearly, the structural mitigation for schools begun in California in 1933 had been successful. But it did not take long for everyone to come to a very scary but real conclusion: If the earthquake had struck on a school day, thousands of L.A. schoolchildren would have been seriously or even gravely injured by non-structural elements. Having avoided this horrendous possibility, the leaders of Los Angeles, working with FEMA, embarked on an unprecedented seismic retrofitting plan to remove the danger of falling lights in their schools.

The L.A. school district is second in size only to the one in New York City, providing public educational services to more than 800,000 students in a 708-square mile area. At present, the L.A. school district is composed of over 900 schools and employs 57,000 full-time and 24,000 part-time staff.

The suspended ceiling and imbedded pendant lighting systems have been proven to be dangerous to people who are in buildings subject to earthquakes: They fall from the ceiling when shaken by strong seismic motion. The Northridge Earthquake caused hundreds of lighting units to fall onto desks in classrooms that the students and teachers would normally occupy during a school day. In fact, over 5,500 school buildings were damaged that day.

By prioritizing and protecting their schools, the people of Los Angeles ensured the safety of their children and educators, protecting the living foundation of their future.



PRIORITIZING MITIGATION EFFORTS

An active and effective *Disaster Resistant Community Planning Committee* will want to determine what they can do to address the community's risk for disasters. It is important that a community identify its own mitigation priorities—using its own reasons and mitigation goals—when carrying out Project Impact. Each partner on the *Disaster Resistant Community Planning Committee* may have a different top priority. In that instance, the Community CEO or committee leader will need to negotiate a balanced, reasoned agreement among all the partners on a short- and long-term mitigation strategy.

See the Community Partners Checklist about conducting a successful meeting at the back of the guidebook.

The goal of the *Disaster Resistant Community Planning Committee* at this juncture is to identify mitigation priorities, to identify the mitigation measures you will take to complete those priorities, and to identify the appropriate sources for the financial and other needed supports to achieve those measures.

In the process of planning where to conduct risk reduction actions, the committee will be making decisions about what is most critical to the public good and the future of the community. Public buildings and facilities are often considered in such decisions:

- Health and safety functions often come to the top of the list (e.g., hospitals, fire stations, police stations)
- Public schools are crucial—in addition to the obvious fact that our children are there, they often serve as shelters
- Public utility and transportation systems are critical in response and recovery circumstances
- Courthouses might be important for the reliability of access to business or tax records

Refer to rationale on pages 8-10 for more detailed information about why these entities are important.

Remember to consider the vast majority of private buildings beyond the public structures—the commercial, non-profit, and residential structures—these are often the backbone of our communities:

- Hospitals and health care facilities
- Private schools
- Residential neighborhoods of both single and multi-family dwellings
- Shopping malls and shopping areas
- Industrial sites and parks

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In designing the disaster resistance level a community wants to achieve, it is crucial that a community make decisions about priorities as a group, considering as many different perspectives as possible. Once it has, it can begin to find the appropriate resources for carrying out those priorities.

THE TOOLS TO REDUCE YOUR RISKS

Mitigation Measures

Three major categories of action will emerge as you examine the mitigation measures your community wants to implement:

- Improving the quality and detail of your hazard identification and vulnerability assessments
- Reducing your community's and your children's future losses from natural disasters
- Reducing your community's potential for disasters

See the Mitigation Checklist at the back of the guidebook for more specific information.

IMPROVING HAZARD IDENTIFICATION AND VULNERABILITY ASSESSMENTS

Quantifying Expected Losses

In Chapter 2, we discussed actions your community can take to improve the quality and level of detail in defining the hazards that threaten you. The following information will be most useful to you as you begin to specify mitigation efforts:

- Geographic Information Systems (GISs) can be used to store and rapidly access the mapping information that helps picture the areas and neighborhoods at risk. Equally important, a GIS database will allow you to program, or utilize an existing program, to estimate your losses. These estimates not only help you understand the scope of disaster problem with which you are faced, but also facilitate the identification of mitigation opportunities.
- Improved topographic information, soils data, and the like may be obtained from your State Geological Survey. Such data can greatly improve your delineation of flood, tidal surge, or earthquake hazards, in addition to your estimation of losses from a natural hazard.
- FEMA's Hazards U.S. (HAZUS) program can be provided to you. It already has digitized building data and can be updated with your tax assessment maps or other databases. In addition, HAZUS has a loss-estimation program for earthquakes; work is proceeding to incorporate updates that include flood and hurricane loss estimates, as well.
- Detailed examinations of structural risks can be achieved with the help of local engineers and should be considered whenever engineered structures are the target of a mitigation measure. Technical assistance materials for the conduct of such examinations can be obtained from FEMA and other sources.

The private sector is a key ingredient. The capability and need for the commercial sectors to address their exposure to losses and to become disaster resistant businesses with disaster resistant jobs by contributing to a disaster resistant community cannot be overstated.

MITIGATION IN NEW CONSTRUCTION AND COMMUNITY GROWTH

Through the measures you implement to mitigate risks in new construction and community growth, you will help ensure that the relative risk in your community, town, city, or county does not increase in the future. Most of the decisions will revolve around the way the *Disaster Resistant Community Planning Committee* expects your new buildings to perform during the hazard events whose effects you want to mitigate. You will want to avoid life-threatening collapses; however, you might determine whether higher levels of performance—reparable damage, continued functioning—will be needed due to the critical nature of the building. Building codes and their enforcement through site inspections by a knowledgeable person will help achieve this goal.

Community growth and capital development should be planned to avoid or minimize potential losses. Community growth management plans and their enforcement will help your community to grow into safer areas, or to grow safely in hazardous areas. *See sidebar at right and on page 24 for specific mitigation measures.*

One of the first things the *Disaster Resistant Community Planning Committee* will want to do in Phase Three is to review existing policies and practices relating to hazard regulation, including:

- Community growth management planning
- Land use planning and regulation
- Subdivision decisions
- Transportation planning
- Planning for open spaces
- Conservation and recreation
- Public safety and housing
- Preservation of historic resources

Mitigation measures dealing with community growth may include:

- Plan for open space acquisition of high hazard potential areas.
- Adopt policies that require consideration and mitigation of identified hazards when decisions are made with respect to subdividing or consolidating parcels, changing land uses, or redevelopment.
- Provide incentives—such as density bonuses, waivers of fees, set asides, reduced parking requirements, and ability to transfer development credits to less hazardous areas—to building owners to encourage investment in Project Impact and other projects that reduce disaster losses.
- Develop incentives to encourage owners of buildings and facilities to undertake projects that will improve the performance of their structures when subjected to the forces of natural hazards (such as the real estate transfer tax rebate, permit fee waivers, or making available residential seismic upgrades through grants, loans, and other mechanisms).
- Identify disincentives and recommend steps to remove them.
- Identify and seek legislation needed to provide incentives.
- Consider use of redevelopment to finance and manage building retrofit efforts.
- Determine whether there are incremental mitigating improvements that can be made to facilities as part of ongoing maintenance and performance enhancements.
- Upgrade plumbing and electrical systems and anchor architectural finishes and equipment.
- Support community efforts to improve or replace vulnerable utilities and transportation systems.

Refer to the Resource ID Checklist at the back of the guidebook for more information about incentives.

Mitigation measures to improve code enforcement:

- Provide training for plan checkers and inspectors regarding code requirements and the principles pertinent to the hazard.
- As part of the building code, adopt administrative procedures ("triggers") to require owners to evaluate the likely structural performance of their buildings contingent upon a change of use or project initiation that increases the number of occupants due to a change in occupancy type or size of the building.
- Adopt ordinances or guidelines that will guide owners' efforts taken to reduce the probability of future losses. Anticipate application of new retrofit guidelines.
- Create a process to consider codes drafted by outside organizations and to garner endorsement from the local engineering community.
- Review the codes used by the city to determine whether they address the hazards identified for the city.
- Survey the building safety department to determine whether their resources and competencies are sufficient to carry out plan review and construction inspection needed to assure quality construction.
- Provide public information activities. (*Chapter 4 discusses specific ways to communicate Project Impact to your community.*)

The committee can provide language for revisions or updates to the community's general (or comprehensive) plan that discusses natural hazard issues and policies relevant to the considerations described above. By incorporating improved hazard identification data into the plan, for example, your community will incorporate mitigation into its day-to-day decision-making.

One of the best ways to enhance mitigation in your community is to develop new public policies. Integrate multi-hazard risk reduction into the ongoing activities of the city and of the local partners by drafting policies to reduce losses for consideration by all Project Impact partners, especially the decision-makers, the workforce, and the community at large.

REDUCING THE POTENTIAL FOR DISASTERS TODAY

Mitigation in Existing Construction

Experience has shown that effective mitigation actions in buildings and facilities currently at risk can reduce disaster losses significantly. At the back of the guidebook, there is a list of actions you can take to address specifically each of the major hazards. *See Mitigation Measures Checklist.*

It is always worthwhile to have expert advice and input about the selection of the most cost-beneficial technique for your community's risks, but in many instances the best selection may be obvious. In identifying what will be rehabilitated or retrofitted, the *Disaster Resistant Community Planning Committee* should try to empower the building owners, facilities owners, or homeowners to identify the effective mitigation measure they would prefer to implement.

PROJECT IMPACT'S MITIGATION PLAN

Listing Your Priorities

Your final step in implementing Project Impact is to prepare a long-term plan that specifies a strategy for accomplishing your goals. It should describe objectives with specific deadlines, assign responsibility for each element, identify participants for each task, specify needed resources and expected sources, and set priorities. The plan should include the activities that each of your Project Impact partners can contribute to your disaster resistance goals.

IDENTIFYING AND PRIORITIZING RISK REDUCTION ACTIONS IN YOUR COMMUNITY SUMMARY

Purpose

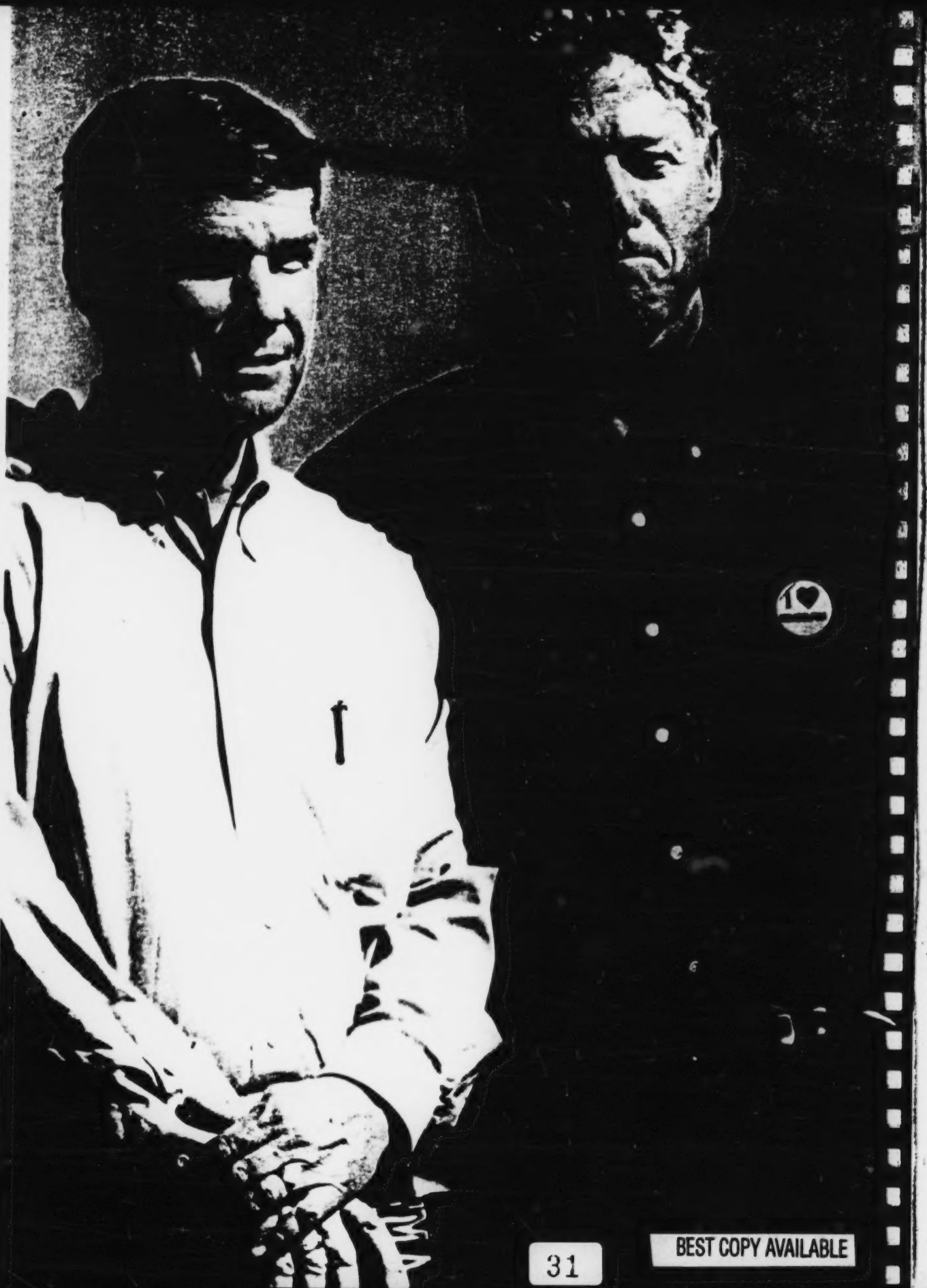
- Estimate the consequences of natural hazards to your community by matching the information about hazards to vulnerability.
- Identify the community's mitigation priorities.
- Identify preferred mitigation measures.
- Develop a strategic plan that reflects the community's priorities, resources, and preferred mitigation measures.

Products

- Equipment and training needed to run a GIS database or the FEMA-supplied HAZUS.
- Realistic scenarios of estimated losses and the consequences for consideration by the community and decision-makers. The consequences should be expressed in terms of criticality to the community. Estimated casualties, estimated value of direct losses, disruption and loss of infrastructure services, losses from fire, and economic losses due to all of these factors help drive the process of identifying priorities. The analysis allows the community to determine which elements appear to be the cause of these losses and to consider the efficacy of different mitigation strategies.
- An understanding of the likelihood of damage caused by a given natural disaster and an estimation of its consequences on the community—its residences and businesses.
- Identification of where damage and loss of functionality are expected to occur (e.g., locations, types of buildings, utility, and transportation system elements).
- A strategic mitigation plan based on identification of community mitigation priorities, preferred mitigation measures, and the resources needed to carry out the strategy.

Upon completion of the Third Phase of Project Impact, you should have:

- Assessed your community's disaster risk
- Begun to seek community input
- Analyzed all information related to public and private buildings
- Identified and implemented mitigation actions relevant to your risks
- Developed policies pertaining to community growth
- Prepared a long-term Project Impact plan
- Begun to identify and apply potential resources for carrying out priorities



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SUCCESS

Communicating Project Impact to Your Disaster Resistant Community

By now you're well on your way to building a disaster resistant community. You've identified and secured interested partners from the community at large. You've assessed your risk for natural disasters. You've written a plan to build a disaster resistant community based on your local circumstances. And you may have even begun implementation of Project Impact. Now what? You will want your community to stay focused on the disaster resistant community objectives of Project Impact—to understand what the disaster resistant community initiatives are, why they are important to everyone, and how to be supportive and get involved. While this chapter includes pointers and ideas to help you do this, you should also know that FEMA may be able to provide sample materials, resources, and additional program ideas based on national activities as Project Impact unfolds.

Sharing Success

The critical need to communicate with your citizens and businesses about the importance of disaster resistance cannot be overstated. The best way to have the positive message of mitigation take root in your community is to ensure that your community is informed about the undeniable benefits of mitigation and the effect it will have on your community in the future. Perhaps it is best to let Director Witt, in his own words, illustrate the positive power communication can have in your disaster resistance effort. After the 1994 Northridge earthquake, he shared the following story:

"As I have talked with people in many neighborhoods affected by this earthquake, I have met people committed to rebuilding their communities, schools, and their businesses.

While visiting a particularly hard-hit area with Hillary Clinton, I noticed a house that seemed to be in much better shape, both inside and out, than others around it. I talked with the homeowner and asked the gentleman why he had fared so much better. He told me that he had received videotape that showed how to protect a home against earthquake damage. He learned how to secure appliances, such as strapping his water heater, and how to secure bookcases and other items in his house that could topple and cause injury. It worked, and that man and his family were spared much of the anguish that his neighbors were experiencing. This videotape is now available at video rental stores and other locations."

Perhaps your greatest responsibility and challenge in this effort will be to make sure as many people as possible hear about the benefits of mitigation so that they replicate the success of the homeowner Director Witt encountered after the Northridge earthquake.

KEEP IT GOING

Form a Publicity Subcommittee

To maintain and generate interest and public support, you will need to establish a publicity subcommittee responsible for developing a communications plan that utilizes mass media, special events, spokespeople, and educational outreach.

You will want to appoint a chairperson to head up the effort. This could be someone from the core Project Impact planning committee or another person tied to or at least cognizant of its initiatives. For instance, you may want to contact the public relations or community affairs manager for the city or locate PR people at any one of the partnering companies involved with Project Impact. It is important to note that it will be incumbent upon the subcommittee leader to ensure media coverage and community awareness. It may also prove important to make sure everyone gets a fair share of airtime (i.e., all Project Impact participants should receive the amount of exposure appropriate to their involvement, experience, and desire to communicate with the public).

Make the Media Work For You

You will want to target print, radio, and television outlets at planned intervals with your messages. As gatekeepers to your community, the media affect and shape our opinions and our behavior. They influence our preferences and our choices. By encouraging reporters to write or broadcast your messages, you will generate awareness and interest in Project Impact.

Preparing to Work With the Media

A targeted, comprehensive media list is the most essential tool of any successful media campaign. Your media list should include the reporters in your area who are likely to cover news about Project Impact, most likely those who cover community affairs, natural disasters, or the metro desk.

There are additional pointers for developing media lists in the Media Checklist at the back of the guidebook.

Who's Who?

To help your group target appropriate reporters, monitor the news to find out who is writing or saying what. In addition to familiarizing yourself with the particular "beats," reading, watching, and listening to the news can give you insights into building relationships with the media. The following tips will help you begin your media outreach:

- Attempt to get to know the city editor(s) and business editor(s) at your local newspapers. Do the same for news assignment editors at relevant radio and television stations.
- Respond to the news: write "letters to the editor" or op-eds. Commend good reporting by sending a letter or making a phone call.
- Invite key reporters out for a business lunch to discuss Project Impact initiatives.

Additional guidelines to help you work with the media can be found in the Media Checklist at the back of the guidebook.

DEVELOPING YOUR MESSAGE

Even though each community will have its own overriding communications objective, the key message in support of building a disaster resistant community is mitigation. In order to mitigate effectively, partnerships need to be formed to lessen the impact of a disaster or hazard to a community before it occurs. Therefore, your secondary message most likely will include the strengths and benefits of alliance building. Once the communications objective has been agreed upon by the members of the *Disaster Resistant Community Planning Committee*, the key messages must be included in all communications: public presentations, written "letters to the editor," op-ed columns, and media interviews. That message should be used and repeated to ensure that the entire community hears and understands the role of the committee in building a disaster resistant community through Project Impact.

What Is Your Message?

Once you know who in the media you are going to contact, you will want to develop compelling information to send to them. First, define your messages. Then determine how to present the message and information as newsworthy. Keep in mind the reporters' beats and any relevant information you have discovered about them from monitoring the news (e.g., what they've reported on in the past, specific formats or reporting styles, special interests). Remember that any materials you send should help establish and enhance relationships with the press. Contact the right reporter at the appropriate outlet with a relevant story at the right time.

Making Spokespeople Work for You

To help get your message out directly to the community and to help the media do their jobs more effectively, identify various spokespeople who can talk about Project Impact from different points of view. These spokespeople most likely will be members of the Project Impact team. Since group members are key members of the community, they will already be appropriate representatives of your target audiences.

There are many ways to employ speakers throughout your campaign:

- Offer them as experts to the media (this may include live interviews, quotes, research, or story development)
- Market them to key civic groups in your community such as Rotary and Lions clubs, Girl and Boy Scout troops, Jaycees, Knights of Columbus
- Schedule them as keynote speakers to talk about Project Impact at special events
- Develop public service announcements for broadcast placement with their help

Maximizing the number of different spokespeople who repeat Project Impact messages will help raise awareness because people retain information best when it is presented to them over and over again from a variety of sources. Also, listening to your community and addressing their fears, concerns, and questions is vitally important to success. Your spokespeople will facilitate that exchange and serve as a conduit to public opinion.

Feedback

In addition to receiving feedback about Project Impact from your spokespeople, you will need to develop or create another way to channel communication between the *Disaster Resistant Community Planning Committee* and the general public. For instance, hold regular community meetings to create a public forum in which questions can be asked, issues can be raised, answers can be given, and concerns can be addressed. These public town meetings will also help you sell Project Impact beyond the planning committee to the community at large.

Be sure to invite:

- Elected officials: mayor, governor, members of legislature or Congress
- Business leaders: largest employers, small business owners, chamber of commerce
- Civic and community groups: Lions Club, Kiwanis, Jaycees, PTAs
- Members of the news media

In addition, your community newspaper may be willing to run a Q & A column about Project Impact initiatives. Or, your local utility company (a planning committee member) may be willing to include a bounceback form or short survey in utility bills. Feedback allows you to adjust your communications plan quickly and effectively, and it allows you to evaluate public opinion and gauge support. This may be particularly important if resentment or controversy is brewing.

The Media as a Partner

Journalists in your community may be ideal partners for participating in and promoting Project Impact. Media outlets serve a dual role in a community: They are a vital source of news and public information before, during, and after a disaster, and, as employers, they are members of the business community. Partnering with your local newspaper or television station will ensure appropriate, ongoing coverage of Project Impact while involving a valuable business partner whose actions are highly visible throughout the community.

Opportunistic Tie-Ins

As we have noted, community involvement in Project Impact is crucial to its success. You will want to assess your community's ongoing activities for opportunities to present information about Project Impact's initiatives. Annual fairs or festivals may offer an opportunity to host an information booth, which will help you get the word out, solicit volunteers, and address public concerns.

Special Events

By publicly tracking the progress of your disaster resistant community, you can help maintain awareness, support, and positive public opinion. To do this, you will want to capitalize on "milestones" occurring throughout the implementation of Project Impact—planning special events, press conferences, celebrations, or other visible and visual proof of your accomplishments. It may be useful to plan milestones to coincide with existing anniversaries, such as the date of a significant disaster in your community's history. Milestone events will generate media attention, community involvement, and public excitement, especially if tied to a locally relevant date and time.

Event Planning Tips

The best way to avoid problems in event planning is to allow plenty of time to plan ahead.

To help you remember important logistics, refer to the Event Planning Checklist at the back of the guidebook.

Also, to extend coverage of your event, create a system for measuring the results of the event. This could include determining how many people attended and/or how much media coverage resulted. Post-event news releases should then focus on these accomplishments.

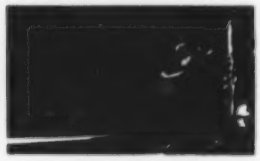
COMMUNICATING PROJECT IMPACT SUMMARY

Upon completion of the Fourth Phase of Project Impact you should have:

- ❍ Formed a publicity subgroup
- ❍ Developed your version of the Project Impact message
- ❍ Created a timeline for media outreach in relation to actions carried out
- ❍ Recruited media outlets as partners or sponsors
- ❍ Developed a speakers bureau
- ❍ Developed and distributed promotional mitigation materials
- ❍ Accessed FEMA materials (including this guidebook) on the FEMA Web page at www.fema.gov

CHECKLIST

COMMUNITY PARTNERS



The following organizations and community groups should be involved in disaster mitigation efforts. This Project Impact potential partners checklist is meant to be a guide; you can design your contact list to meet the specific needs of your community.

	☑
Industry & Business	
Employers (*top 10 or 20 minimum*)	
Business Associations (*regional and neighborhood*)	
Chamber of Commerce	
Real Estate Developers	
Construction Industry	
Infrastructure	
Transportation Systems (*public and private*)	
Public Housing	
Utilities	
• gas	
• water and sewage	
• electric	
• telephone	
• cable	
Volunteer & Community-Based Organizations	
Places of Worship/Religious Groups	
Red Cross	
Kiwanis	
Lions Club	
Jaycees	
Knights of Columbus	
Rotary	
American Association of Retired Persons	
Public Interest Groups	
Parents-Teachers Association (PTA)	
Environmental Groups	
Neighborhood Associations	

	☑
Health Care	
Hospitals	
Medical Clinics	
Managed Care Facilities	
Emergency Medical Services (EMS)	
Government	
Federal	
• FEMA & other federal agencies	
State	
• representatives of governor	
• state agencies	
County & Local	
Elected Officials	
Town Managers	
Task Forces	
State Agencies	
• police department/law enforcement	
• fire department	
• public works	
• planning committee	
• zoning	
Workforce	
Unions (AFL-CIO)	
Professional Groups	
Education	
School Board	
Public & Private	
Universities & Community Colleges	
Vocational & Continuing Education	
Day Care & Child Care Centers	
Nursery Schools & Pre-Kindergarten	
Others	

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CHECKLIST

COMMUNITY PARTNERS

Conducting a Successful Meeting

Meetings are an important part of the activities of the *Disaster Resistant Community Planning Committee*, and in the beginning successful meetings can influence the momentum and enthusiasm of participants. Here are a few pointers for conducting successful committee meetings, many of which have been excerpted from the book *Fat Free Meetings* by Burt Albert, Peterson's 1996.

Mark Your Calendar: Establish a calendar of meeting dates, times, and locations and post or deliver it to all committee members.	
Set the Vision: At the first meeting of the committee, make sure everyone is in agreement about the following items regarding the committee:	
❑ Purpose ❑ Scope ❑ Limitations ❑ Deliverables ❑ Milestones ❑ Deadlines	
Set the Tone Among Participants: At the first meeting, invite participants to answer the questions below—they can either read them out loud or have the written answers reproduced for distribution at the meeting. These questions are designed to give insight to each participant's concerns, desires, and values.	
• What do I see as my role and responsibilities to this committee?	
• To be successful here, what do I need from the rest of the committee?	
• To be successful here, what do I need to give to the committee?	
• How do I see our committee contributing to the betterment of our community?	
• What specific things will occur in this meeting and through this committee to ensure such an outcome?	
• How do I plan to contribute to the success of this meeting and this committee?	
Check Level of Understanding: Some information that will be discussed at *Disaster Resistant Community Planning Committee* meetings will be somewhat technical, yet it is critical to the risk assessment and mitigation components of the Project Impact campaign. Ask questions of the participants to make sure they understand everything that is discussed and why it is important before misunderstandings become a barrier to progress.	
Set Goals: To ensure focus, the meeting facilitator should set goals for the meeting and consider sharing these goals with the group. For example, ask yourself:	
• If this meeting were a press event, what headline would I want to come out of this meeting?	
• What will participants take away from the meeting? What will be its value?	
• How will I measure the success of this meeting—what specific things need to be seen or heard?	
Set the Agenda: Urge participants to submit agenda requests on a standardized form that outlines what the individual would like the committee to do, why he or she would like the committee to do it, and what benefit it will bring to the committee and project as a whole. This prevents unnecessary agenda items that can be handled on an individual or subgroup basis, as well as reveals topics that need to be further developed before they are submitted to the entire committee.	
Have an Action-Oriented Agenda: When developing the agenda for the committee meetings, use action-oriented words that don't merely state what you are going to talk about, but connote activity and even outcomes. This helps keep your meeting focused and cuts down on time. For example, compare the following:	
Agenda Items — **Agenda Action Items**	
❑ Committee Members — ❑ Recruiting New Committee Members	
❑ Risk Assessment — ❑ First Steps for Risk Assessment	
❑ Publicity — ❑ Appointing a Publicity Subcommittee	

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WORKSHEET

COMMUNITY PARTNERS

Industry & Business

Transportation Systems

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WORKSHEET

COMMUNITY PARTNERS

Public Utilities

Volunteer & Civic Organizations

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WORKSHEET

COMMUNITY PARTNERS

Government Facilities & Operations

WORKSHEET

COMMUNITY PARTNERS

Health Care Facilities

Schools

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CHECKLIST

IDENTIFYING RISK

Use the suggestions below to help you map operational and economic considerations in your community. Identify:

What are the largest and most critical employers (including government and education)?	
How do employees reach their workplace?	
What utilities and modes of transportation are needed to keep businesses operating?	
What is the impact on local economy if businesses are not fully operational?	
What is the likelihood of permanent business closings and increases in unemployment?	
What are the location and hazard risks of customers and suppliers?	
What are the specific hazards to employees at specific facilities during a disaster?	
Are schools the primary form of temporary housing?	
What is the impact of closed schools to education funding and school year?	
How many people would each health care facility be able to accomodate?	
How important are rail, air, and port functioning to response and recovery after disasters?	
What communications channels are in place to relay important information in times of disaster?	

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CHECKLIST

RESOURCE IDENTIFICATION

The following categories, organizations, and incentive ideas should provide your Project Impact partners with a starting point in determining who has an investment in the disaster resistance of your community and what everyone can bring to the table to make the partnership successful.

☑

Federal Agencies	
• FEMA	
• Agriculture	
• Commerce	
• Defense	
• Education	
• Energy	
• Health and Human Services	
• Housing and Urban Development	
• Interior	
• Labor	
• Transportation	
• Environmental Protection Agency	
• Small Business Administration	
• Other federal agencies	
State Agencies Relating To:	
• Office of the Governor	
• Transportation	
• Environment	
• Housing	
• Economic Development	
• Education	
• Budget	
• Insurance	
• Building or Construction Departments	
• Community Affairs	
• Public Health and Safety	
• Other state agencies	

Non-Profit Institutions	
• Community Foundations	
• Charitable Trusts	
• Colleges and Universities	
Banking & Insurance	
• Low interest mitigation	
• Premium reductions	
• Flood determinations for clients	
• Other financial incentives	
Employers	
Develop reasonable cost-effective incentives that will benefit your company, employees, and community	
Employee Organizations	
Donate labor for carrying out minimally engineered mitigation solutions in houses	
Professional Organizations	
Donate professional services or assistance in code enforcement, plan reviews, etc.	

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CHECKLIST

MITIGATION MEASURES

☑

WILDFIRE MITIGATION ACTIONS	
Site	
Remove vegetation and combustible materials around structures	
Provide more than one means of access into and out of a community	
Provide fire breaks to prevent the spread of fire	
Provide fire roads to aid in firefighting	
Buildings/Contents	
Replace roofing with fire-resistant materials	
WIND MITIGATION ACTIONS	
Public Works/Utilities	
Electrical	
Provide higher grade poles for electrical distribution.	
Provide guy wires on poles subject to failure	
Provide emergency back-up power to critical facilities: emergency generators, secondary feeds, portable generators with standard camlock connections	
Analyze communication lines on power poles: If they cause unacceptable loads, remove when possible	
Make sure right-of-way around power lines is free of trees or limbs that may cause damage	
Traffic	
Protect traffic lights and other traffic controls from high winds	
Vegetation Thin trees to reduce wind damages and plant species of plants that are more resistant to wind damage	
Emergency Shelters Structurally analyze all buildings or rooms identified as shelters and strengthen these as necessary	
Buildings—Residential and Commercial	
Install shutters on windows and doors or otherwise protect building openings from wind damage	
Ensure that roof-mounted equipment, including cowlings and flashing, is securely mounted to the building	
Install additional connections (such as hurricane straps and tie downs) to resist wind loads	
When re-roofing a building, check and refasten the roof sheathing	
When re-roofing a critical building, consider providing additional protection from water damage (such as a layer of mopped felt)	
When re-roofing a building, avoid gravel or ballast on single-ply-membrane roof: Hurricane force winds could pick this up and damage buildings	
Consider underground electrical service (check on flooding hazard)	
Provide additional bracing for roof trusses	
Reinforce existing unreinforced masonry walls with the addition of reinforced columns and bond beams	
Minimize the number and size of existing windows and other openings and reinforce walls around openings	
Strengthen or select a wind-resistant exterior wall finish	
Inspect installation of pre-engineered metal buildings and strengthen as necessary	
SEISMIC MITIGATION ACTIONS	
Public Works/Utilities	
Replace brittle equipment in electrical substations	
Analyze/strengthen water towers	
Retrofit bridges, overpasses, and other critical transportation links	
Provide shut-off valves in distribution lines for water and gas service	
Buildings/Contents	
Add additional seismic connections through methods such as bolting	
Add shearwalls in buildings	
Brace equipment (such as sprinkler piping) whose failure could lead to increase building damages following an earthquake	
Brace equipment (such as mechanical equipment, chillers, emergency generators, and elevators) whose failure may disrupt the operation of a critical facility, such as a hospital	

List continues on back

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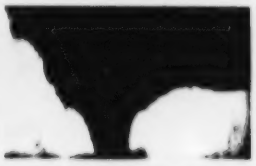
CHECKLIST



MITIGATION MEASURES

	✔
Brace high value equipment (such as computers and medical equipment) that could topple and get damaged	
Brace equipment that could block building exits or kill or injure people	
Brace parapet walls on buildings; brace or demolish outdoor shelters that pose collapse hazards	
Structurally retrofit unreinforced masonry buildings	
Structurally retrofit roofs during re-roofing	
Provide emergency back-up power to critical facilities: Emergency generators, secondary feeds, portable generators with standard camlock connections	
Harden critical wireless emergency communication systems	
Control use of sites with known high geological and seismic risk	
FLOOD MITIGATION ACTIONS	
Public Works/Utilities	
Protect or elevate ground-mounted transformers	
Elevate vulnerable equipment, electrical controls, and other equipment at waste water treatment plants, potable water treatment plants, and pump stations	
For sewer lines in the floodplain, fasten and seal manhole covers to prevent floodwater infiltration	
Protect wells and other potable water from infiltration and flood damage by raising controls and well pipe	
Replace low bridges or other obstructions that may induce flooding of houses or businesses	
Move building contents to a higher floor or store outside of the floodplain	
Residences	
Elevate existing residences above flood elevation on a new foundation	
Relocate residences outside floodplain	
Acquire and demolish residences	
Store important documents and irreplaceable personal objects (such as photographs) where they will not get damaged	
Elevate or relocate furnaces, hot water heaters, and electrical panels	
Provide openings in foundation walls that allow floodwaters in and out, thus avoiding collapse	
Build and install flood shields for doors and other openings (after evaluating whether the building can handle the forces) to prevent floodwaters' entering	
For drains, toilets, and other sewer connections, install backflow valves or plugs to prevent floodwaters from entering home	
Buy and install sump pumps with back-up power	
Businesses	
Elevate, floodproof, relocate, or demolish buildings	
Store important documents, such as insurance papers and other business papers, where they will not get damaged	
Elevate or relocate furnaces, hot water heaters, electrical panels, and other equipment	
Provide openings in foundation walls that allow floodwaters in and out, thus avoiding collapse	
Build and install flood shields for doors and other openings (after evaluating whether the building can handle the forces)	
For drains, toilets, and other sewer connections, install backflow valves or plugs; these can be tested by a plumber before a flood by plugging the sewer drain and filling waste pipes with clean water	
Backflow of sewer lines can occur outside of the flooded areas, particularly where there are combined sanitary or storm sewer systems; check with the city or county engineer for advice	
Move inventory that may be flooded; reduce inventory that may be flooded, if possible elevating, relocating, or protecting equipment that can be flooded	
Identify stored hazardous materials or other chemicals that could be flooded; and relocate or elevate these	

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CHECKLIST

MEDIA

Media lists should include:

Newspapers (dailies, weeklies, monthlies, college/university papers, and community newsletters)	
City and Regional Magazines	
Local Trade and Business Publications	
State Bureaus of National Wire Services, such as the Associated Press (AP), Reuters, and United Press International (UPI)	
Local Radio and Television Stations (including college/university networks)	
Local Cable Stations	
Public Broadcasting Stations (which may have community affairs programming)	
Public Information Officers at military bases, if applicable (many military housing areas have broadcast stations and newsletters that may reach the entire families of service members)	

Regardless of the medium, for the most part your media list should consist of the following types of reporters:

Metro Desk/City Reporters—interested in news "around town"	
Public Affairs Reporters—interested in civic and legislative issues	
Business Reporters—interested in hard news involving regional business, local economy, and economic/community growth (e.g., impact on sales, environment, address changes)	
News Assignment Editors	
Public Service Announcement Directors	

Media Guidelines: When working with reporters, try your best to:

• Correct inaccuracies, otherwise they will be accepted as fact.	
• Pair use of statistics with stories or case studies that bring them to life.	
• Repeat important information to reinforce key message points.	
• Know your community objectives and the goals of Project Impact. Be prepared to provide information and answer questions in depth.	
• Stay out of other people's business. If a reporter asks you about the emergency fire rescue unit, for example, reply, "Let me get a firefighter to answer that."	
• Always be honest. If you don't know an answer to a question say so and offer to find the answer or refer the reporter to someone who can.	

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CHECKLIST

EVENT PLANNING

	✔
Facility Appearance	
Conduct a "walk through" to determine the appearance of the facility before the event and check for:	
• Condition of signs, canopy, lobby, etc.	
• Adequacy of space for attendance	
• Accessibility for senior citizens and people with disabilities	
• Available parking	
• Bad weather considerations and alternatives	
Equipment	
Test equipment before use and allow time to get any needed replacements. Test the equipment with the actual materials you plan to use ahead of time. This is especially important for manufacturing equipment if you plan to give guided tours.	
Other Considerations	
These may or may not apply to your event, but they are important to keep in mind as you plan for your events:	
• Videotape equipment	
• Microphones/amplifier	
• Lectern	
• Platform/stage	
• Lighting	
• Air conditioning/heating	
• Acoustics	
• Recording equipment	
• Audiovisual aids (e.g., screens, charts, easels, chalkboards, slide projectors, slides)	
• Electrical outlets	
• Tables and chairs	
• Reception area	
• Photographer/video crew	

Materials	
Make sure your spokespeople and staff are equipped with the materials they need to effectively deliver your messages and meet event objectives. Examples include:	
• Agenda, schedule, or program	
• Gifts or awards	
• Brochures	
• Media kits	
• Direction signs	
• Name tags	
• Host badges or ribbons	
• Guest book or sign-in sheet	
• Posters or banners	
• Placards for speakers or guests of honor	
Staffing	
Make sure staff are available to oversee these different functions:	
• Rehearsal	
• Parking/traffic control	
• Registration and guest sign-in	
• Master of ceremonies or emcee duty	
• Photography and videotaping	
• Decorations	
• Catering	
• Audio/visual arrangements	
• Entertainers (such as musicians)	
• Set up/clean up	

NOTE: *If your event involves a presentation or demonstration, you may wish to have prepared questions for designated questioners in the audience to facilitate Q&A discussion.*

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WORKSHEET

PERSONALIZED MEDIA LIST

Contact
Title
Publication/TV Station/Radio Station
Address
Telephone Numbers
Fax Number
Circulation/Reach
Other/Misc.
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BEST COPY AVAILABLE

The Project Impact Guidebook: What is it and how do you use it?

This guidebook is designed to help you and your community build a disaster resistant community. It is intended to help you "mitigate" or protect your community, the residents, organizations, businesses, infrastructure, and the stability and growth of its economy as much as possible against the impact of natural disasters BEFORE they happen.

Experience has shown again and again that lives can be saved, damage to property can be reduced significantly, and economic recovery can be accelerated by consistently building safer and stronger buildings, strengthening existing infrastructures, enforcing building codes, and making the proper preparations BEFORE a disaster occurs.

More important, mitigation investments by the businesses and citizens of your community will enhance and strengthen the economic structure, stability and future of your community regardless of when a disaster may strike.

The goal of Project Impact is to bring communities together to take actions that prepare for and protect themselves against natural disasters in a collaborative effort. To accomplish this goal, we have organized pre-disaster activities into four phases. The chapters of the guidebook represent each of these four phases:

- Building Community Partnerships
- Identifying Hazards and Community Vulnerability
- Prioritizing Hazard Risk Reduction Actions
- Communicating Success

These sections will help you implement Project Impact in your community – beginning with identifying crucial partners; continuing with determining risks and prioritizing your actions; developing a specific mitigation plan; and communicating your activities and success to sustain support and maintain involvement.

In each section you will find a case study – an example of how people like you have built a disaster resistant community. At the back of the guidebook, you will find checklists and worksheets that will help you specifically tailor the Project Impact initiatives to your community.

Depending on your perspective, priorities, and experience, the information contained in the guidebook will have varying applicability to your efforts. We urge you to utilize the information that is relevant to you and your community and to use the guidebook as an evolving tool in your disaster mitigation efforts.

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Project Impact
Making a Difference in Disaster Resistance

In the four years that I have been the director of FEMA, I have witnessed the resilience and resourcefulness of millions of Americans across this country as they recover from disasters and begin to rebuild. Their spirit, faith, and hope in the face of adversity has served as a constant inspiration and reminder of the importance of our mission. We could never have imagined the devastation that we have seen in communities across the nation—not just in areas typically known for disasters, but throughout the entire country.

In my short time at FEMA, President Clinton has declared disasters in virtually every state, in many states, two or even three times. The costs are staggering. It takes years for local governments, businesses, and citizens to recover emotionally and financially from even the smallest of disasters. Years later, the impact still persists. A loss of jobs, depressed economy, and vital community resources are drawn away from investments for the future to replace the losses of the present.

Many of these communities, homes, and families could have been protected through the mitigation actions that government, businesses, and citizens can take. We no longer can let this happen.

The good news is that communities everywhere are taking the responsibility for alleviating the impact of disasters. All over the country elected officials, businesses, and involved citizens are doing their part to protect themselves. The reasons may be different in every case: to ensure the safety of citizens; to prevent damage to facilities and delays of business; to protect families and homes. But the desired results—a safer future for our communities and families—are the same.

In this guidebook, we outline four steps you can take to help you capitalize on the positive forces already at work and build a disaster resistant community: forming partnerships, assessing risk, prioritizing needs, and communicating with your community. This guidebook is meant to provide a framework from which to work, ideas about how to approach building a disaster resistant community, and examples of things that have worked in other communities. You and others in your community know best what risks you face, and you know best the resources available to you to mitigate against disaster.

I thank you for your interest and invite and challenge you to embrace the ideals of Project Impact and to create a partnership that will make your community disaster resistant. It will benefit your family, community, and the future of our children and our nation.

James L. Witt
Director
Federal Emergency Management Agency

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FEMA Region I

FEMA Region II

FEMA Region III

FEMA Region IV

FEMA Region V

FEMA Region VI

FEMA Region VII

FEMA Region VIII

FEMA Region IX

FEMA Region X

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